EXPONENTIAL EQUATIONS

1. GET THE PART WITH VARIABLE IN EXPONENT BY ITSELF
2. TAKE LN OF BOTH SIDES
3. USE PROP. OF LOGS TO GET VARIABLE OUT OF EXPONENT
4. SOLVE FOR X

6. $e^{x-2} = 3$

$\ln e^{x-2} = \ln 3$

$x - 2 = \ln 3$

$x = 2 + \ln 3$

LOG PROPERTIES

1. $\log M + \log N = \log(MN)$
2. $\log M - \log N = \log\left(\frac{M}{N}\right)$
3. $P \log M = \log M^P$

7. $\ln \frac{3x}{y}$

$\ln(3x) - \ln y$

$\ln 3 + \ln x - \ln y$

8. $\ln \frac{x^2 y^3}{z}$

$= \ln(x^2 y^3) - \ln z$

$= \ln x^2 + \ln y^3 - \ln z$

$= 2\ln x + 3\ln y - \ln z$

9. $\ln \sqrt[5]{x-7}$

$= \ln (x-7)^{\frac{1}{5}}$

$= \frac{1}{5} \ln (x-7)$